



UNITED STATES PATENT AND TRADEMARK OFFICE

Handwritten signature

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,919	08/21/2003	Yoshinori Miyaki	T&A-108-03	6498

7590 03/18/2004

MATTINGLY, STANGER & MALUR, P.C.
Suite 370
1800 Diagonal Road
Alexandria, VA 22314

EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,919

Applicant(s)

MIYAKI ET AL.

Examiner

DiLinh Nguyen

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/21/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show a step of mounting the chip on a surface of an inner lead arrangement side of the insulating member as described in the claim 27. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 25-27 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Michiyo (JP. 05160304).

- Regarding claims 25-26, Michiyo discloses a semiconductor device (cover fig., abstract) comprising:
a plurality of inner leads;

a thin sheet shaped insulating member 18 joined to an end portion of each of the inner leads and capable of supporting a semiconductor chip 10;

mounting the semiconductor chip on the insulating member in the package area;
connecting surface electrode of the semiconductor chip and the inner leads corresponding thereto by a wire 15;

forming a seal portion resin sealing 16 the semiconductor chip, the wire and the insulating member; and

a plurality of outer leads exposed from the seal portion. It is inherently that the package is forming from a plurality of package areas in a matrix arrangement.

- Regarding claim 27, Michiyo discloses a step of mounting the chip on the insulating member and inner leads mounting on the same side of the insulating member.
- Regarding claim 30, Michiyo discloses a step of being assembled by sing the lead frame in which the inner leads and the insulating member are joined by an adhesive layer 19 disposed only on a lead joining portion of a surface of an inner lead arrangement side of the insulating member.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michiyo in view of Fogal et al. (U.S. Pat. 5177032).

Michiyo fails to disclose a length of a shorter side of a main surface of the semiconductor chip formed in an quadrilateral shape is twice or less than a distance from a tip of the inner leads arranged at the farthest location from a center line of the semiconductor chip in a plane direction, to the semiconductor chip, when the chip is mounted on the insulating member.

Fogal et al. disclose a semiconductor device comprising: a length of a shorter side of a main surface of the semiconductor chip formed in an quadrilateral shape is less than twice a distance from a tip of the inner leads arranged at the farthest location from a center line of the semiconductor chip in a plane direction, to the semiconductor chip, when the chip is mounted on the insulating member (fig. 3). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Michiyo to secure the die to the lead frame and improve an efficiency in mounting semiconductor device, as shown by Fogal et al.

- Regarding claim 29, Fogal et al. disclose a step of being assembled by using the lead frame in which the inner leads and the carrier material 42 are joined by an adhesive layer 46 disposed throughout the entire of a surface of an inner lead arrangement side of the insulating member (fig. 5).

Conclusion

Art Unit: 2814

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
March 9, 2004

Wael Fahmy
SPE 2814